#### **SITE PLAN CHECKLIST**

The following items need to be shown on twelve (12) folded copies of the site plan prepared by a licensed Surveyor or Engineer. When filling out the following checklist, if an item is not applicable, the Surveyor or Engineer should indicate "NA" in the box. Staff will use this checklist to ensure the application is complete.

GEN	IERAL	
	Correct sheet size (24" x 36")	
	Drawn in blue or black ink	
PRC	JECT INFORMATION	
	Title of project	
	Name(s) and address(es) of owners	
	Name of engineer, architect, planner, landscape architect, surveyor or other preparer of the plan	
INS	ERT MAP	
	Inset/vicinity map showing the site location that includes:	
	1. Correct scale (not less than 1" = 2,000')	
	2. North arrow	
	<ol> <li>Zoning information</li> <li>Major identifying features (major roads, waterbodies, etc.)</li> </ol>	
SITI	E SURVEY	
	Boundary survey of the site or a plan drawn to scale	
H	All existing physical features (drawn to scale)	
H	All proposed development (drawn to scale)	
H	Existing and proposed street/easement information:	
H	General location of woodlines	
П	General location(s) of tree stands	
_	1. Street name(s)	
	2. Street number(s)	
	3. Street width(s)	
	4. Existing and proposed utility easement(s)	
	5. Watercourse(s) with names and owners	
Ш	Existing and proposed site entrance information:	
	<ol> <li>Entrance location(s)</li> <li>Entrance type(s)</li> </ol>	
	3. Entrance size(s)	
	Parcel information:	
	1. Owner name(s)	
	2. Tax map parcel number	
	3. Parcel identification number (GPIN)	
	4. Lot area (in acres)  5. Dead back and page number(s)	
	<ul><li>5. Deed book and page number(s)</li><li>6. Zoning classification(s)</li></ul>	
	Adjacent parcel information:	
ш	1. Owner name(s)	
	2. Tax map parcel number(s)	
	3. Parcel identification number(s) (GPIN)	
	4. Deed book and page number(s)	
	5. Zoning classification(s)	
PAR	KING	
	Provisions for off-street parking, loading spaces, and pedestrian walkways	
	Calculations indicating the number of parking spaces required and the number provided	

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#### **SITE PLAN CHECKLIST (Continued)**

The following items need to be shown on twelve (12) folded copies of the site plan prepared by a licensed Surveyor or Engineer. When filling out the following checklist, if an item is not applicable, the Surveyor or Engineer should indicate "NA" in the box. Staff will use this checklist to ensure the application is complete.

EΝ	/IRONMENTAL
	A clear delineation of the following environmental features:
	1. Tidal wetland(s)
	2. Tidal shore(s)
	<ol> <li>Nontidal wetland(s) connected by surface flow and contiguous to tidal wetlands or tributary streams</li> <li>A 100-foot buffer area located adjacent to and landward of any tidal wetlands, tidal shores, and nontidal wetlands shown</li> </ol>
	5. A 100-foot buffer area along both sides of any tributary stream
	6. The site-specific geographic extent of the RPA
	7. Other sensitive environmental features as determined by the Environmental Director
	Existing topography and proposed finished contours
	Provisions for the adequate control of stormwater drainage and erosion and sedimentation, indicating all proposed temporary and permanent control measures
	Computations notation to include the total site area, and the amount and percentage of the site covered by open space and buildings, or dwelling units for multifamily residential developments
	Final plans for all lands within RPAs shall include the following additional information:
	1. The delineation of the resource protection area boundary
	2. The delineation of required buffer areas
	3. All wetlands permit(s) required by law
	<ol> <li>The delineation of septic tank and reserve drainfield</li> <li>The delineation of any vegetation required to be preserved under article II, chapter 94 of this Code.</li> </ol>
ΙΔΝ	IDSCAPING
	Areas to be screened, fenced, walled and/or landscaped (with approximate arrangements, plant types and sizes)
BUI	LDINGS
П	Location of each building
$\overline{\Box}$	Number of floors for each building
$\overline{\Box}$	Floor area for each building
$\overline{\Box}$	Height for each building
SAN	IITIATION
	All existing and proposed water supply facilities
	All existing and proposed sanitary waste disposal facilities
RES	IDENTIAL DEVELOPMENT INFO (if applicable)
	Number, size and type of dwelling units
	Location, type and percentage of total acreage of recreation facilities
REC	QUIRED SITE PLAN NOTES
The	following notations must be included on all site plans:
	A notation that all new or relocated utilities shall be placed underground
	A notation that amendment/deviation henceforth from this final approved site plan shall be submitted to the Planning Department for supplemental review and approval.

#### **IMPORTANT**

The New Kent County Environmental Department <u>requires</u> that completed Erosion & Sediment Control and Stormwater Management plan checklists be submitted for all site plans.

PLEASE CONTACT THE ENVIRONMENTAL DEPARTMENT AT (804) 966-8580 WITH QUESTIONS.

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Sheet # or N/A	_ , , , , , ,
	Required Information
Project Informa	tion
	Project description - Briefly describes the nature and purpose of the land-disturbing activity, and
	the area (acres) to be disturbed.
	Existing site conditions - A description of the existing topography, vegetation and drainage.
	Adjacent areas - A description of neighboring areas such as streams, lakes, residential areas, roads,
	etc., which might be affected by the land disturbance.  Off-site area - Describe any off-site land-disturbing activities that will occur (including borrow sites,
	waste or surplus areas, etc.). Will any other areas be disturbed?
	Soils - A brief description and map of the soils on the site giving such information as soil name,
	mapping unit, erodibility, permeability, depth, texture and soil structure.
	Critical areas - A description of areas on the site that have potentially serious erosion problems (e.g., steep slopes, channels, wet/weather/ underground springs, etc.).
	Erosion and sediment control measures - A description of the methods which will be used to
	control erosion and sedimentation on the site. (Controls should satisfy minimum standards in the
	latest edition of the Virginia Erosion and Sediment Control Handbook).
	Permanent stabilization - A brief description, including specifications, of how the site will be stabilized after construction is completed.
	Stormwater runoff considerations - Will the development site cause an increase in peak runoff
	rates? Will the runoff cause flooding or channel degradation downstream? Describe the strategy to control Stormwater runoff.
	Schedule of regular inspections/ repairs of erosion and sediment control structures.
	Calculations - Detailed calculations for the design of temporary sediment basins, permanent
	stormwater facilities, diversions, conveyance channels, etc. Include calculations for pre- and post-
	development runoff.
<b>Erosion and Sed</b>	liment Control Plan
	Minimum Standards - All Applicable Minimum Standards must be addressed and adhered to
	throughout the entire life of the project.
	Existing and proposed topography, vegetation, clearing limits, etc.
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	Erosion and sediment control plan must clearly depict how concentrated runoff will be diverted into sediment basins or traps during all phases of construction.
	A construction entrance must be provided at each entrance point to the site.
	If a wash rack is proposed at an entrance, discharges must drain to a sediment trapping devise
	Clearly label all areas to receive permanent seeding, mulching, top soiling, etc.
	All temporary stockpile locations must be shown on the phase 1 ESC plan, including perimeter sediment trapping measures.
Overall Drainage	e Patterns
	Detailed drainage map defining the contributing drainage area (pre and post development) in acres, including any off-site drainage, and sub-areas used in calculations.
	Reference to the hydraulic method used including supporting data used in computing flows preand post-development where required.
	Show computations for weighted coefficients (i.e. C-values) and times of concentration for all drainage areas.
	Indicate location, size, types and grades of existing and proposed ditches, inlets, pipes, and connections to existing drainage systems on plan and profiles.
	Existing and proposed drainage easements to be dimensioned and labeled on plan set. Include deed book and page number of recordation.
	Show all storm sewer pipes, inlets and appurtenances, identifying inlets and other appurtenances by type and number: the station on the plan must conform to the station on the profile. Include the following information: Inlets - depth and spread, length of throats, top elevations; Pipes - material, class, diameter, velocity, capacity, invert elevations, slope. Include profile of storm sewer systems.
	Show hydraulic grade line on all profiles for 10yr storm event. Note elevations at key points (inlets and manholes).
	For proposed culverts, include inverts, length, type and class, discharge protections, outlet velocity, diameter, design cover.
	Descriptions of all proposed storm sewer structures in a drainage summary.
	For all proposed ditches and channels include: typical cross sections, depth, side slopes, longitudinal slope, type of lining (by station), Manning's "n" value, contributing drainage area, and flow arrows.
	Include details of VDOT standard structures where applicable (inlets, curb and gutter, etc).
	Details for all non-standard/special design structures (flumes, basin outlets, energy dissipaters, level spreaders, etc.)
	Field location of all-natural watercourses or drainage ways affected by/related to construction (include direction of flow).
	Field located limits of 100-year flood zones and backwater inundation. Specify on cover sheet if project is, or is not located in a 100-year floodplain.
Drainage Calcula	Show all proposed under drains for roadways with outlet locations clearly identified and defined.  ations
	Provide calculations to support design of all storm inlets, pipes, ditches and culverts.
	Include supporting computations for all special design structures (end walls, inlets, flumes, energy
	dissipaters, channels, etc.)  Driveway culverts computed for each lot, and specify sizing.
Stormwater Ma	nagement Plan: Water Quality/ Quantity Analysis & Design
	Specify the technical criteria used on the plans (IIB or IIC from VSMP Regulations), and complete appropriate section (A or B) of this checklist below.
	SWM wet ponds and extended detention ponds have been engineered to pass the 100-year storm

Completeness re	view: the following items must be included for the Stormwater Management Plan to be deemed "Complete" for preliminary review.
	1. Information on the type and location of stormwater discharges; information on the features to which stormwater is being discharged including surface waters, if present, and the predevelopment and post-development drainage areas.
	2. Contact information including the name, address, and telephone number of the owner and the tax reference number and parcel numbers of the property or properties affected.
	3. A narrative that includes a description of current site conditions and final site conditions.
	4. A general description of the proposed stormwater management facilities and the mechanism through which the facilities will be operated and maintained after construction is complete.
	<ul><li>5. Information on the proposed stormwater management facilities, including;</li><li>a.) The Type of facility;</li><li>b.) Location, including geographic coordinates;</li><li>c.) Acres treated;</li><li>d.) the surface waters, if present, into which the facility will discharge.</li></ul>
	6. Hydraulic computations, including runoff characteristics
	7. Documentation and calculations verifying compliance with the water quality and quantity requirements.
	8. A map or maps of the site that depicts the topography of the site and includes: a.) all contributing drainage areas; b. Suiting streams and subjects discharge water described as the support of the site and flooring as a subject of the support of the site and flooring as a subject of the support of the site and flooring as a subject of the support of the site and includes:
	b.) Existing streams, ponds, culverts, ditches, wetlands, other water bodies, and floodplains; c.) Soil types, geologic formations, forest cover, and other vegetative areas; d.) Current land use including existing structures, roads, and known utilities and easements; e.) Sufficient information on adjoining parcels to assess the impacts of stormwater from the site on these parcels; f.) The limits of clearing and grading, and the proposed drainage patterns on the site; g.) Proposed buildings, roads, parking areas, utilities, and stormwater management facilities; and h.) Proposed land use with tabulation of the percentage of surface area to be adapted to various uses, including but not limited to planned locations of utilities, roads, and easements; i.) If an operator intends to meet water quality requirements through the use of off-site compliance options, where applicable, then a letter of availability from the off-site provider must be included. Approved off-site options must achieve the necessary nutrient reductions prior to the commencement of the applicants land disturbing activity except as otherwise allowed by Virginia
	Code 62.1-44.15:35  A pre-development and post-development map should be included which clearly depicts pre-development land cover and post-development t landcover for the entire site with appropriate summary tables of acreage for each classification
	Elements of the stormwater management plans that include activities regulated under Virginia Code 54.1-400 et seq. shall be appropriately sealed and signed by a professional registered in the commonwealth of Virginia pursuant to Virginia Code 54.1-400 et seq.
	Water quality impact analysis & Chesapeake Bay calculations, if required. Use Chesapeake Bay Local Assistance Manual, Virginia Stormwater Management Handbook or other acceptable engineering method. Cite sources and reference of methods used.
Section A. – Sto	rmwater Management Technical Criteria IIB (If using IIC, skip to Section B)
	Water Quality Design Criteria Requirements
	Provide a water quality compliance summary. At a minimum, summary shall include: BMP type, Geographic location (latitude/ longitude), drainage area size, HUC code, Acres treated (pervious/impervious), Receiving waters, Impaired waters, TMDL, whether receiving channel was restored, and if so, how far down gradient.
	Submit completed Development or ReDevelopment VRRM spreadsheet for design criteria. Must be current version of spreadsheet to be accepted.

If off	-site Compliance is used, the following must be demonstrated:
	Documentation of the following criteria have been met:  a.) Less than five acres of land will be disturbed;  b.) The post construction phosphorous control requirement is less than 10 pounds per year, or;  c.) The state permit applicant demonstrates to the satisfaction of the VSMP authority that (i) alternative site designs have been considered that may accommodate onsite best management practices, (ii) onsite best management practices have been considered in alternative site designs to the maximum extent practicable, (iii) appropriate onsite best management practices will be implemented, and (iv) full compliance with post-development nonpoint nutrient runoff compliance requirements cannot practicably be met onsite. If an applicant demonstrates onsite control of at least 75 percent of the required phosphorous nutrient reductions, the applicant shall be deemed to have met the requirements of clauses (i) through (iv)
	Demonstrate that offsite compliance options are available
	Provide evidence that the offsite option achieves the necessary nutrient reductions prior to operator's land disturbing activity or prior to each phase for multi-phased projects
	Provide verification that the offsite options do not violate local water quality-based limitations at the point of discharge that are consistent with any TMDL
	Water Quantity Design Criteria
	<u>Channel Protection</u> (cross sections of a receiving channel must be provided at the 50, 100, and 150-foot mark downstream of the discharge)
	1. Concentrate stormwater flow is discharged into a manmade stormwater conveyance system and meets one of the following conditions and criteria:
	a. The manmade stormwater conveyance system conveys the post-development peak flow rate from the 2-year 24-hour storm without causing erosion to the system.
	b. The peak discharge requirements for concentrated stormwater flow to natural conveyance systems has been met.
	When stormwater from development is discharged into a restored stormwater conveyance system it meets one of the following conditions:
	<ul> <li>a. The development is consistent, in combination with other stormwater runoff, with the design parameters of the restored stormwater conveyance system that is functioning in accordance with the design objectives</li> </ul>
	<ul> <li>b. The peak discharge requirements for concentrated stormwater flow to natural conveyance systems has been met.</li> </ul>
	3. When stormwater from a development is discharged to a natural stormwater conveyance system, the maximum peak flow rate from the one-year 24-hour storm has been calculated using an approved methodology (i.e. Energy Balance equation)
	4. The stormwater conveyance system has been analyzed for compliance based on land area or peak flow rate. (Only used when meeting channel protections criteria through #1 or #2)
	Flood Protection
	Concentrated stormwater flow shall be released into a stormwater conveyance system and shall meet one of the following criteria as demonstrated by use of acceptable hydrologic and hydraulic methodologies:
	Concentrated stormwater flow to stormwater conveyance systems that currently do not experience localized flooding during the 10-year 24-hour storm event.
	(i) conveyance system must confine the post development peak flow rate from the 10- year 24-hour storm event.
	2. Concentrated stormwater flow to stormwater conveyance systems that currently experience localized flooding during the 10-year 24-hour storm event.
	(i) Confines the post development peak flow rate from the 10-year 24-hour storm event within the stormwater conveyance system to avoid the localized flooding; or

	b. Technology-based criteria: The post-development stormwater runoff from the
	<ul> <li>a. Performance-based criteria: The Performance-based Water Quality Calculations     worksheet has been submitted and identifies the applicable situation for the site, pre- development pollutant load, post-development pollutant load, and the minimum pollutant removal requirement</li> </ul>
	Water quality compliance will be achieved by using performance-based criteria or technology-based criteria
	Geographic location (latitude/ longitude), drainage area size, HUC code, Acres treated (pervious/impervious), Receiving waters, Impaired waters, TMDL, whether receiving channel was restored, and if so, how far down gradient.
	Provide a water quality compliance summary. At a minimum, summary shall include: BMP type,
	Water Quality Design Criteria Compliance
	Construction of SWM impoundment structures within 100-year floodplains have been avoided to the extent possible
	*Proposed subdivisions have applied these SWM criteria to the development as a whole
	Hydraulic parameters reflect the ultimate land development and were used in all calculations
	Pre-development and post-development runoff rates have been provided
	Impounding structures have been engineered to pass the 100-year storm event
	Construction of SWM facilities or modifications to channels comply with all laws and regulations and documentation is provided
	All pervious lands in the site were assumed to be in good condition prior to development with good cover or with conservation Treatment
	The design storm used was a 24-hour storm and of critical duration that produces the greatest required storage volume
Section B. Stol	Determination of flooding and channel erosion impacts to receiving stream has been measured at each point of discharge
Section B - Stor	mwater Management Technical Criteria IIC (If using IIB, complete section A)
	2. Increased volumes of sheet flow that will cause or contribute to erosion, sedimentation, or flooding of down gradient properties or resources have been diverted to a SWM facility or a stormwater conveyance system that does not cause down gradient erosion, sedimentation, or flooding.
	Increased volumes of sheet flow resulting from pervious or disconnected impervious areas, or from physical spreading of concentrated flow through level spreaders, have been identified and evaluated for impacts on down gradient properties or resources.
	Increased Volumes of Sheet Flow  Demonstrate that all runoff from the site is sheet flow and the following conditions have been met.
	c. The stormwater conveyance system enters a mapped floodplain or other flood-prone area, adopted by ordinance, of any locality.
	b. The sites peak flow rate for the 10-year 24-hour storm is less than or equal to 1.0% of the existing peak flow rate from the 10-year 24-hour storm, prior to the implementation of any stormwater quantity control measures.
	Stormwater conveyance system has been analyzed for compliance with flood protection criteria to a point where:      a. The sites contributing drainage area is less than or equal to 1.0% of the total watershed area draining to a point of analysis in the downstream stormwater conveyance system;

	Water Quantity Design Criteria
	Properties and receiving waterways downstream of any land-disturbing activity have been protected from erosion and damage due to changes in runoff rate of flow and hydrologic characteristics, including velocity, frequency, duration, and peak flow rate of stormwater in accordance with minimum design standards
	Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system. For those sites were runoff is discharged into a pipe or pipe system, downstream stability analysis at the outfall of the pipe or pipe system shall be performed.
	Adequacy of all channels and pipes has been verified by:
	1. It has been demonstrated that the total drainage area to the point of analysis within the channel is 100 times greater than the contributing drainage area of the project in question;
	2. (a) Natural channels have been analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.
	(b) All previously constructed man-made channels have been analyzed by the use of a 10-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks;
	(c) Pipes and storm sewer systems have been analyzed by the use of a 10-year storm to verify that stormwater will be contained within the pipe or system
	3. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant has:
	(a) Improved the channels to a condition where a 10-year storm will not overtop the banks and a two-year storm will not cause erosion to the channel, the bed, or the banks;
	(b) Improved the pipe or pipe system to a condition where the 10-year storm is contained within the appurtenances;
	(c) Developed a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a 10-year storm to increase when runoff outfalls into a man-made channel; or
	(d) Provided a combination of channel improvement, stormwater detention or other measures which is satisfactory to the VESCP authority to prevent downstream erosion
	Necessary calculations for determination of compliance with MS19 (adequate channel) have been completed and submitted, along with cross sections of all receiving channels at the 50, 100 and 150-foot mark, downstream of the discharge point.
	The 10-year post-developed peak rate of runoff from the development site shall not exceed the 10-year predeveloped peak rate of runoff to meet flood protection criteria
Stormwater Poll	ution Prevention Plan (PPP) Sheet
	Pollution prevention plan sheet included in plan set. Complete SWPPP docment will be required to be submitted prior to pre-construction meeting for review.
	PPP details the design, installation, implementation, and maintenance of effective pollution prevention measures to minimize the discharge of pollutants. Such measures have been designed, installed, implemented, and maintained to:  (a) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters will be treated in a sediment basin or alternate control that provides equivalent or better treatment prior to discharge.  (b) Limit the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater have been minimized; and (c) the discharge of pollutants from spills and leaks have been minimized and spill response procedures have been implemented
	PPP includes effective best management practices to prohibit the following:

	(a) Wastewater from washout of concrete
	(b) wastewater from washout and cleanout of construction materials
	(c ) Fuels, oils, or other pollutants used in vehicle/ equipment operation or maintenance
	(d) Soaps or solvents used in vehicle/ equipment washing
	(e) The PPP prohibits discharges from dewatering activities unless managed by appropriate controls
Chesapeake Bay	Preservation Areas (RPA/RMA), and Wetlands
	Wetlands and RPA/RMA have been delineated and accurately mapped on plan set in accordance with approved USACOE determination, and a site-specific RPA determination.  (a) RPA determination included a perennial flow determination
	Complete wetlands delineation and USACOE confirmation is included in submittal package, along with RPA site specific determination information, including perennial flow determination, and WQIA where applicable
	The 20-foot building set back from the 100-foot RPA has been shown on the plan set
	All applicable permits for construction in state or federal waters have been obtained from the appropriate local, state, and federal agencies and approval letter and permits numbers are included in the package submittal or located on the cover sheet of the site plan.
	A note has been added to the cover sheet that specifies the existence of Resource Protection Area and /or Resource Management Area features on site, or lack thereof
	For lots containing RPA, a note has been added to the cover sheet that all portions of the lot not designated as RPA, lie within the RMA
	A note has been added to the cover sheet that specifies the that the 100-foot wide RPA buffer must be retained on the parcel undisturbed and vegetated unless proper buffer modifications have been granted by New Kent County
	Permanent signage of a form approved by the County has been placed along the RPA buffer delineation where it is intersected by property lines and at 300-foot intervals between property lines, and a note to this effect has been added to the cover sheet.
	All private sewage disposal systems, including both primary and 100% reserve drain field locations have been located and a notation is found on the cover sheet to the effect that all private on-site sewage disposal system(s) shall be pumped out at least once every five years
	If the RPA buffer has previously been modified or reduced in the past due to agricultural or silvicultural operations, the plan must call for reforestation of the full 100 ft buffer
	Trees and other woody vegetation to be removed for shoreline projects and all replacement vegetation required shall be shown.
	The land-disturbing activity involves flood control and SWM facilities located in RPAs defined in the CBPA. The facilities drain or treat water from:  a) Multiple development projects; or b) A significant portion of a watershed, and the local government has established that the location of the facility within the RPA is the optimum location